

9

Outer portion 520 of strain relief 500 may be formed in an additional molding step. This type of molding may be referred to as a double-shot process. Cable 526 passes through exterior portion 520. Exterior portion 520 may be formed around a projection or key 512 of interior portion 510, to provide a secure fit between interior portion 510 and exterior portion 520. Key 512 may have protrusions such that exterior portion 520 does not rotate relative to interior portion 510. Exterior portion 520 may be made of a flexible material, such as a thermoplastic elastomer, fluorinated ethylene propylene, or other appropriate material. Exterior portion 520 may provide the flexibility needed to protect cable 526 from excessive wear at its interface with strain relief 500 and the housing.

Interior portion 520 may be located in a housing. This housing may enclose a power transformer or converter, wired or wireless data or communication circuitry, or other types of electronics circuitry. The color of exterior portion 520 may be made to match a color of the housing or cable.

In other embodiments of the present invention, strain relief 500 may be formed using a three step process. In these embodiments, the additional step is a first molding step where cables 526 and 516 are covered. The following two steps provide the remainder of interior portion 510 and exterior portion 520. In various embodiments of the present invention, cables 526 and 516 may be one cable or they may be multiple cables.

FIG. 6 illustrates a strain relief 600 according to an embodiment of the present invention. Strain relief 600 includes interior portion 610 and exterior portion 620. Interior portion 610 may provide fire protection, while exterior portion 620 may provide a flexible strain relief. A side of a housing, shown here by dashed lines, may fit in the gap or slot 628. Again, the housing may house transformers, data communications circuitry, and other types of electronic circuitry.

The above description of embodiments of the invention has been presented for the purposes of illustration and description. It is not intended to be exhaustive or to limit the invention to the precise form described, and many modifications and variations are possible in light of the teaching above. The embodiments were chosen and described in order to best explain the principles of the invention and its practical applications to thereby enable others skilled in the art to best utilize the invention in various embodiments and with various modifications as are suited to the particular use contemplated. Thus, it will be appreciated that the invention is intended to cover all modifications and equivalents within the scope of the following claims.

What is claimed is:

1. A power cable assembly comprising:

a cable plug comprising a cylindrical housing having a first circular end and a second circular end, and a first opening at the first end and a second opening on a side of the cylindrical housing, the second opening spaced away from the first end and the second end; and

a cable including a power conductor and a ground conductor and entering the cable plug at the first opening at the first end of the cylindrical housing, the cable plug further comprising

a plurality of contacts each having a portion beyond the second opening in the side of the cylindrical housing such that contact may be made with opposing contacts in a compatible connector receptacle;

a light-emitting diode; and

a magnetic element located at least between the plurality of contacts and the second end of the cylindrical housing.

10

2. The power cable assembly of claim 1 wherein the cylindrical housing is formed using plastic.

3. The power cable assembly of claim 1 wherein the cylindrical housing is substantially unitary.

4. The power cable assembly of claim 1 wherein the magnetic element comprises an attraction plate.

5. The power cable assembly of claim 1 wherein each of the plurality of contacts pass through the second opening in the side of the cylindrical housing and extend beyond the cylindrical housing.

6. The power cable assembly of claim 4 wherein when the cable plug is inserted in a compatible connector receptacle the magnetic element in the cable plug is magnetically attracted to a magnet in the connector receptacle.

7. The power cable assembly of claim 1 wherein the magnetic element comprises a magnet.

8. The power cable assembly of claim 7 wherein when the cable plug is inserted in a compatible connector receptacle the magnetic element in the cable plug is magnetically attracted to a magnet in the connector receptacle.

9. The power cable assembly of claim 8 wherein the cylindrical housing is formed using plastic.

10. A cable plug comprising:

a cable having a power conductor and a ground conductor; an assembly comprising a nonconductive insulative housing and power and ground conductors, the power and ground conductors of the assembly terminating in a first and second contact, the first contact coupled to the power conductor of the cable and the second contact coupled to the ground conductor of the cable;

a plurality of contacts including the first contact and the second contact and located in passages in the assembly and each having a contact portion such that contact may be made with opposing contacts in a compatible connector receptacle;

a light emitting diode;

a magnet between the plurality of contacts and an end of the cable plug; and

a cylindrical housing enclosing at least a portion of the assembly and light emitting diode, the cylindrical housing having a circular first end and a circular second end.

11. The cable plug of claim 10 wherein the cylindrical housing is unitary.

12. The cable plug of claim 10 wherein the cylindrical housing includes a first opening at a first end, where the cable enters the cable plug at the first opening.

13. The cable plug of claim 10 wherein the contacts are fixed contacts.

14. The cable plug of claim 10 wherein the contacts comprise a center contact, two ground contacts, and two power supply contacts.

15. The cable plug of claim 14 wherein the power supply contacts are on each side of the center contact, and the ground contacts are on each side of the power supply pins away from the center contact.

16. A cable plug comprising:

an insulative housing having a first circular end and a second circular end;

a printed circuit board;

a cable including a power conductor and a ground conductor, the power conductor and ground conductor coupled to the printed circuit board;

a plurality of contact pins having a contact portion extending beyond the housing such that contact may be made with opposing contacts in a compatible connector receptacle, the contact pins having tail portions soldered to the printed circuit board;